BRITISH EMPIRE S. CTION, G-2

June 1, 1938

BRITISH EMPIRE GREAT BRITAIN / Combat

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UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND.

Combat Estimate. Ligence, WDGS By Authority

5 REC 1947 5 VETER OF NATIONAL DEFENSE.

UNCLASSIFIED

JAMES T. Coordination of National Defense. Major, GSO Dist.

Military Forces. The military forces of the nation consist of the Army, the Royal Air Force, and the Royal Navy, which function under separate and coordinate ministries, namely, the War Office, the Air Ministry and the Admiralty, respectively. These ministries are loosely coordinated by the Minister for the Co-ordination of Defence. See paragraph 1 c, and Appendix 2, Organization of Air Ministry.

- Supreme Command. Supreme command of the military forces is vested in the Crown but is exercised by the Government through the respective ministries.
- c. Committee of Imperial Defence. The Committee of Imperial Defence is an advisory body set up in 1904 to coordinate the policies and plans for national defense. The Prime Minister is the Chairman and the Minister for the Co-ordination of Defence is the Deputy-Chairman. The remaining membership is elastic, but in time of peace generally includes the three service ministers, their Chiefs of Staff, the Chancellor of the Exchequer, and the Secretaries of State for the Home Department, for Foreign Affairs, for Dominion Affairs, for India, and for the Colonies. Other officials may be included when necessary. As organized at present the Deputy-Chairman, the Minister for the Co-Ordination of Defence, is the actual working head of the Committee and as such the official representative and adviser of the Prime Minister in defense matters. The Committee is the Vice-Chairman's agency for the centralized study of the needs of the three services and their relationships to each other and to other governmental departments. There is a Secretary and about seven assistants, all service officers. Preparatory work is done by sub-committees of which there are over 50, the principal ones being those of Defense Policy and Requirements, Chiefs of Staff, Joint Planning, Man Power, and Principal Supply Officers. Their duties are generally indicated by their names. Sub-committee reports are referred to the entire Committee for action. Final decisions are made by the Cabinet and are carried into effect by the ministries concerned.
- This estimate includes the British military forces in Crown Colonies and Egypt but not in India (except where specifically stated) nor in the Dominions. Combat Estimates for 1937 have been published for India, Canada and Australia. Estimates for Ireland (Irish Free State), New Zea-LIBRARY FIGURE TO South Africa are no longer published but are available tibrary Intelligence Division, War Department wast be Foundation. land and Union of South Africa are no longer published but are available

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II. ARMY.

2. Personnel.

a. Strength. The following are the estimated actual strengths of the components of the Army as of June 1, 1938:

	Active	Reserve	Total
Regular Army (exclusive of India			
and Burma)			
Officers	9,600	9,500	19,100
Men	141,000	128,000	269,000
Territorial Army			
Officers		9,500	9,500
Men		171,000	171,000
Territorial Reserve of Officers		7,000	7,000
Supplementary Reserve Officers		1,800	1,800
Men	1	23,000	23,000
Officers Training Corps		5,000 (1	
Militia, Malta and Bermuda		1,000	1,000
Total - British Army Proper	150,600	355,800	506,400
Duritials Assess in Turkin and Daysons			
British Army in India and Burma Officers	2.800		2,800
Wen	54,000		54,000
	V		
Total Organized Forces	207,400	355,800	563,200
A 22111 - 7			
Additional man power Trained (2)			150,000
Untrained (2)			4,000,000
			1,000,000
Total Available Man Power (3)			4,713,200

- (1) This number includes only the cadets of the Senior Division in universities. In addition, there are about 27,000 cadets of the Junior Division in secondary schools.
- (2) Of these it is estimated 5,000 are officers.
- (3) This includes white man power in the United Kingdom and colonies only. Based on the precedent of the World War very few colored troops would be used for military service.

3. Organization.

a. Command. The command of the Army is exercised by the Army Council. The Chief of the Imperial General Staff as the senior military member thereof has some of the attributes of the commander-in-chief, but in general is coordinate with the other military members.

War Office.
(1) Organization. The organization of the War Office, to include the principal components thereof, is shown in diagrammatic form in Appendix 1, Organization of War Office. It will be noted that the principal departments are coordinate and are responsible to the Secretary of State for War through the Army Council.

(2) Army Council. The Army Council, the membership of which is indicated in Appendix 1, is responsible for the government of the Army and orders are issued in its name. Its formal meetings are rare, but informal meetings, attended by all members that may be concerned with the subjects at

hand, are frequently held.

(3) Departmental Functions. The departments of the War Office (see Appendix 1) collectively perform the combined duties of the General Staff and the offices of the chiefs of the arms and branches in our (the United States) service. The functions of the principal departments are as follows:

(a) The Imperial General Staff. The Department of the Chief of the Imperial General Staff is basically concerned with military policy, which includes war planning, training, historical research and military intelligence. It is divided into the three directorates of Military Operations and Intelligence, Staff Duties, and Military Training. Seven inspectors of arms and services are attached to the Military Training Directorate. With respect to training these officers have functions analogous to the chiefs of branches in our service. In general the functions of the Imperial General Staff combine G-2, G-3 and War Plans Divisions of our War Department General Staff, as well as some of those of certain chiefs of branches.

(b) Adjutant-General. The Department of the Adjutant-General to the Forces is concerned with personnel, to include recruiting, organization, administration, military discipline and medical services. In general its functions combine those of G-1, The Adjutant General, the Surgeon General

and the Judge Advocate General in our service.

(c) Quarter-Master-General. The Department of the Quarter-Master-General is concerned with quartering the Army, road, railway and sea transport, construction and maintenance of buildings and fortifications, supply of food, forage and fuel, and remount and veterinary service. In general its functions include those of G-4 and some of those of the Quartermaster General and the Chief of Engineers in our service.

(d) Master-General of the Ordnance. The Department of the Master-General of the Ordnance is concerned with the development, design, and inspection of war materiel, to include artillery, small arms, ammunition, motor vehicles of all kinds, chemical defense, engineer and signal materiel, general stores and clothing. It sets up the demands for these items but does

Par. 3 b (3).

not procure them. On January 1, 1938, this Department, headed by a Deputy Master-General of Ordnance, was incorporated as a whole and without change in organization in the Department of the Director-General of Munitions Production. See footnote of Appendix 1.

(e) Director-General of Munitions Production. The Department of the Director-General of Munitions Production is responsible for industrial planning and for the manufacture or procurement of all munitions. It is a civilian department. See preceding subparagraph for recent changes,

and paragraph 6 g (2) for certain duties.

(f) Director-General of the Territorial Army. The Department of the Director-General of the Territorial Army is a new one, having been organized in October, 1937, from a Directorate in the Department of the Parliamentary Under-Secretary of State. Subject to coordination with other departments, it is charged with all phases of control of the Territorial Army and the Supplementary Reserve.

(g) Permanent Under-Secretary of State for War. The Department of the Permanent Under-Secretary of State for War is charged with the conduct of War Office business, including all finance and accounting, and with administration of the Chaplains Department and the Pay Corps. This conservative civilian department, because of its powers of veto in finan-

cial matters, has great influence in the War Office.

c. Armies, Corps and Divisions.

(1) Armies and Corps. In time of peace there are no army or corps organizations. Little is known of plans for war organizations, except that

normally a corps will be composed of two divisions and corps troops.

(2) Field Force. The peace organization of the Regular Army at home provides a Field Force (previously called the Expeditionary Force) of five infantry and one mobile divisions, with necessary attached combat and line of communications troops, for early dispatch to continental Europe or to other areas where needed. It is probable that it will be organized as a field army of two corps with the Mobile Division operating under Army control. If and when a second Mobile Division is organized, one probably will be assigned to each corps.

(3) Cavalry Division. There is no organized horse cavalry division

or brigade.

(4) Infantry (Motorized Division). After over two years of experimentation and change announcement was made in March, 1938, of the new organization of the infantry division. It will consist of three brigades of three rifle (light machine gun) battalions (see paragraph 3 d (6) (b)); three field artillery regiments (see par. 3 d (2) (b)); one antitank artillery regiment (see par. 3 d (2) (b)); with Signals, Engineer, Ordnance, Royal Army Service Corps and Military Police units as necessary but in general as organized at present. The division will be completely motorized, although there will not be quite enough transportation to transport all foot troops. All vehicles will be wheeled except the machine gun carriers which have light tracks. The war strength will be 11,992 of all ranks; and it will be equipped with 10,000 (about) rifles, 512 (about) Bren light machine guns, 226 (about)

Par. 3 c (4).

cal. .55 tank rifles, 48 2-pounder antitank guns, 72 25-pounder gun-howitzers, 18 3-inch trench mortars, 108 2-inch trench mortars and 90 armored machine gun carriers. It will be noted that this division does not include any heavy machine gun battalions, a cavalry regiment, medium artillery, infantry tanks or gas units. When the mission requires it is expected that such of these as are needed will be attached. This will increase the power of the division but will decrease its mobility.

(5) Regular Army Infantry Divisions. The five Regular infantry divisions are in general now organized into three infantry brigades of three rifle battalions each; two heavy machine gun battalions; one mechanized cavalry regiment; three field artillery brigades (battalions) of four batteries each; and service elements. All transport is motorized. The war strength is believed to be over 20,000. No estimate can be made of the time these divisions

will be reorganized into motorized divisions.

(6) Territorial Army Infantry Divisions. The 12 Territorial Army infantry divisions generally follow World War organizations. Though some units are missing, in general they consist of one horse cavalry regiment; three infantry brigades of four rifle battalions; three field artillery brigades (battalions) of three batteries each; and service elements. Its estimated war strength is over 19,000 and the average authorized peace strength 9640. The average actual strength is about 8600. No plans for reorganization of these divisions are known.

(7) Mobile-Armoured Division. Under its new title of the Mobile-Armoured Division, the Mobile Division will for 1938 consist of two cavalry brigades of three cavalry light tank regiments each; one tank brigade of one light and three mixed tank battalions; two motorized infantry battalions of unspecified organization and armament; one field squadron, Royal Engineers, of three troops; two brigades (battalions) of horse artillery (mechanized); and Ordnance, Signals and transport units. As organized at present, two

cavalry light tank regiments and one artillery brigade are missing.

(8) Antiaircraft Divisions. The two Territorial Army antiaircraft divisions are charged with the ground antiaircraft defense of London and other industrial areas. Each is divided into four groups of varying numbers of artillery brigades (battalions) and Engineer (searchlight) battalions. The 1st Division has a total of nine and the 2d Division a total of seven artillery brigades; while each have a total of 11 searchlight battalions, with Corps of Signals and Army Service Corps units. Authorized strengths average over 23,000. It has been announced that three more antiaircraft divisions will be organized in the future.

- d. Combatant Arms. Strengths given are authorized peace strengths of Regular Army units exclusive of India and Burma. War strengths are not available.
- (1) Air Force. The 12 Regular and three Auxiliary Air Force army cooperation squadrons are designated for service with the Army. See pars. 9 c and 13 b (3).
- (a) <u>Present Organization</u>. The artillery of the Regular Army is formed into the Royal Regiment of Artillery with a total strength of 26,18t

Par. 3 d (2) (a).

A recent order divides it into two branches. The Field Branch includes all units of horse, field, mountain and medium artillery and the 1st Heavy Brigade. The Coast Defence and Antiaircraft Branch includes all heavy artillery except the 1st Heavy Brigade, all coast defence and antiaircraft artillery, and by gradual absorption all seacoast and antiaircraft searchlight units of the Royal Engineers. This reorganization does not apply to the Territorial Army. In general batteries are formed into brigades (battalions) of four batteries each, although information as yet unofficial indicates that divisional artillery will be formed into regiments. The following is the approximate organizational strength:

	Num	ber batter	ries		
Type batteries	Home	Colonies & Egypt	Total	Type guns	No. guns per btry.
Horse (mechanized)	7	3	10	13-pounder and 3.7"	4-6
Field (42	2	44	18-pounder	4
rield (42	2	44	4.5" howitzer	4
····	15	-	15	6" howitzer	4
Medium (5	-	5	60-pounder	4
Antiaircraft (gun)	12	7	19	3" 20-cwt. AA.	8
Antiaircraft (MG)	4	-	4	Lewis cal30 MG	12
Heavy	11	19	30	Various, mostly seacoast	Various
Totals	138	33	171		

With the exception of one battery all mobile artillery is motorized. All coast defense batteries at home are manned by the Territorial Army and are not included in this tabulation.

(b) <u>Proposed Changes</u>. Announcement of changes in nomenclature of units within the Royal Regiment of Artillery has been made. A lieutenant-colonel's command, now a "brigade," will be called a "regiment." A major's command will be known as a "battery." In the field artillery a battery will consist of three four-gum "troops" of two two-gum "sections." These changed designations will also apply to searchlight units to be taken over by the Royal Artillery. A searchlight "battalion" will become a "regiment" and a "company" a "battery." These changes will not for the present be used in the Territorial Army. Another announced change is the transfer of antitank guns, now manned by the Infantry, to the control of the Artillery. Each

Par. 3 d (2) (b).

motorized division will have one antitank unit (probably to be called a regiment) of four batteries, each with 12 2-pounder antitank guns, making a total of 48. To afford widespread antitank protection each battery will be self-contained.

- (3) <u>Cavalry</u>. The Cavalry is formed into two household and 15 line regiments with a strength of 8,077. In addition there are five regiments in India, with a strength of 2,995. These five are horsed, but will be mechanized gradually. The Cavalry is now undergoing a period of reorganization and mechanization and little definite can be said of unit strengths, organization and equipment. The following is the best available information of the 17 regiments that will form the Cavalry by the end of 1938:
- (a) The two household regiments will remain horsed as they serve for ceremonial purposes.
- (b) Three line regiments at home will remain horsed. Each is organized into three saber squadrons of three troops each, with a total strength of 21 officers and 458 other ranks.
- (c) Six regiments formed into two brigades of the Mobile-Armoured Division have been or are being mechanized and equipped with light tanks. See par. 3 c (7).
- (d) The four regiments now assigned to divisions (of which three are now horsed and one has armored cars) will lose this assignment upon divisional reorganization. See par. 3 c (4). They will be mechanized in the near future with light tanks, armored carriers, or scout cars, depending upon a decision not yet announced.
- (e) Of the three regiments in Egypt, one will remain motorized with Ford cars and the two now horsed will be mechanized.
- (4) Chemical Warfare. There is no Chemical Warfare branch as such and no Chemical Warfare troops. The Master-General of the Ordnance is charged with experimental and development work, and he administers the Chemical Defence Committee and the Chemical Defence Research Department. The Committee is an advisory and consultative body of scientific experts including representatives of the three defense services and eminent civilian scientists. The Research Department carries out research and experiment, presumably only for defense against chemical agents, but actually also for chemical warfare. Research and experiment is conducted for the three services, as well as for the Home Office for gas defense under the Air Raids Precautions Act.
- (5) Engineers. The Royal Engineers are organized to carry out work of a technical nature requiring the use of special tools or the possession of technical skill. Officers when first commissioned receive special engineering training and a large number of the enlisted men are tradesmen (corresponding generally to specialists in our service). The corps is divided into three main branches:
- (a) Field, Fortress and Antiaircraft Units. The following table includes the principal units under this category. Strengths of units vary somewhat under certain circumstances:

Par. 3 d (2) (b).

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Par. 3 d (5) (a).

No.	Units	Designation Constitut sta	Peace	Strength
Home	Abroad	Designation, function, etc.	Off.	Hen
4		Divisional Engineers, each of hq., 1 field park company, and 3 mechanized field companies. For duty with infantry division.	14	380
1	2	Separate Field Company.	4	126
1		Field Squadron, consisting of hq., hq. troop and 2 field troops. For duty with Cavalry.	5	137
2		* Antiaircraft Battalions, consisting of head- quarters and 4 companies. Man antiair- craft searchlights.	31	860
1		Field Survey Company. For map survey and reproduction.	4	58
2	9	* Fortress Companies (Defence Electric Light). Man seacoast searchlights. Strengths vary widely from average given.	6	170
-	2	* Fortress Companies (Mixed). Man seacoast searchlights and engage in construction, etc.	3	137
-	4	* Fortress Companies (Antiaircraft). Man antiaircraft searchlights.	3	. 127

^{*} See paragraph 3 d (2) for data on transfer to Artillery.

(b) Transportation. The Railway Training Centre with two railway companies (each with the strength of about 4 officers and 185 men) forms

a nucleus of trained railway operating personnel.

(c) Works Services. The Royal Engineers are charged with the construction and maintenance of all buildings and fortifications and for the supply of water and electricity. Staff officers from the corps are available to commanders but there are no units in this branch. In the War Office this

service is in the Department of the Quarter-Master-General.

(6) Infantry.

(a) Present Organization. The Infantry, with a total strength of 79,722, consists of five Foot Guards regiments with a total of ten battalions and 64 regiments of the line, of two battalions each. All Guards

Par. 3 d (6) (a).

battalions are supposed to serve at home, but at present two are in Egypt. Of the total of 128 line battalions, 43 are in India and two in Burma. Of the remaining 83 battalions not in India and Burma, 57 are at home and 26 in Egypt and the Colonies. Under the Cardwell system, adopted in 1874, each regiment was given a recruiting district and had a training depot for recruit training. One of its battalions was at all times to be stationed at home and one on foreign service, including India, rotating in this service. In general this system is now followed, except that overseas requirements demand more than half of the battalions. There are now 26 machine gun and 102 rifle battalions, with all transport mechanized. It is probable that the equipment of all machine gun battalions is not complete.

(b) Proposed Reorganization. Although the present organization of infantry units has just been completed, official announcement of new changes has been made. Infantry bettalions will consist of two types.

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i. Rifle (LMG) Battalion. The rifle battalions will be based on the Bren caliber .303 light machine gun. Completely motorized, it will have a war strength of 22 officers and 623 men. The Headquarters Company will have an antiaircraft section of four Bren machine guns, a mortar platoon of two 3-inch trench mortars, a pioneer platoon, and a carrier platoon of ten armored track laying machine gun carriers, each with one Bren machine gun. Each of the four rifle companies will consist of three machine gun platoons each consisting of three squads with one Bren machine gun each and of one mortar squad with one 2-inch trench mortar. Each platoon or section has one caliber .55 antitank rifle. Officers carry revolvers and men rifles. Each battalion has a total of 22 revolvers, 623 rifles, 50 Bren machine guns, 10 machine gun carriers, two 3-inch and 12 2-inch trench mortars, and 18 antitank rifles.

ii. Heavy Machine Gun Battalion. About eight heavy machine gun battalions will be formed, although this is not definite. Each will consist of four companies of 12 caliber .303 Vickers heavy machine guns each and will be completely motorized. It is probable that guns will be carried loose in light trucks. Wer strength is not known.

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(7) Royal Tank Corps. The Royal Tank Corps, with a total strength of 302 officers and 4,475 men, consists of three types of organizations. The organization and strength of all units are now under review and the data given are for 1937:

(a) Army Tank Battalion. There are two Army Tank Battalions and a third will be organized during 1938. These battalions are for the support of divisions but are not a part thereof. Each consists of a headquarters three mixed tank companies and one light tank company, with a total of 19 medium, 8 close support and 39 light tanks. It has a strength of 38 officers and 486 other ranks. In the battalion headquarters there are two close support and one each light and medium tanks. Each mixed company has seven light, two close support and six medium tanks, each type in its own section. The light company has 17 light tanks.

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(b) <u>Tank Brigade</u>. The Tank Brigade, assigned to the Mobile-Armoured Division, consists of headquarters, three Mixed Tank Battalions and one Light Tank Battalion. A Mixed Tank Battalion consists of a battalion headquarters, with one light, one medium and two close support tanks, and

Par. 3 d (7) (b).

three mixed companies, each with seven light, six medium and two close support tanks; making a total for the battalion of 22 light, 19 medium and eight close support tanks. In the companies each type tank is manned by a separate section. The Light Tank Battalion consists of a headquarters, with four tanks, and three companies of three sections each, with a total of 18 tanks to a company. The peace strength of the Tank Brigade is as follows:

	Person	nel		Tanks	07
	Officers	Men	Light	Medium	Close Support
Brigade headquarters	2	23	1	2	
3 Mixed Tank Battalions	90	1176	66	57	24
1 Light Tank Battalion	30	346	58		
Totals	122	1545	125	59	24

(c) <u>Mixed Tank Battalion</u>, <u>Egypt</u>. A Mixed Tank Battalion in Egypt consists of headquarters and two companies, has a peace strength of 25 officers and 332 men, and is equipped with 22 light, 13 medium and six close support tanks.

(8) Corps of Signals. The Royal Corps of Signals has a total strength of 295 officers and 5,991 men. The following are its more important units, in addition to which there are a considerable number of companies and sections with quite varied organizations and functions:

(a) <u>Corps Signals</u>. There is one Corps Signals with a strength of 22 officers and 520 men. It operates communications from corps headquarters to divisions, corps artillery, etc.

(b) <u>Divisional Signals</u>. There are six Divisional Signals, one of which operates with the Mobile-Armoured Division and the others with the infantry divisions. Each has a strength of about 18 officers and 354 men and consists of three companies. No. 1 Company provides all communication from division headquarters to headquarters of artillery and infantry brigades and to other divisional units. No. 2 Company provides communication within the artillery brigades down to include the battery. No. 3 Company provides communication from the infantry brigades to battalions. (Units furnish their own communications within the artillery battery and the infantry battalion.)

(9) Colonial and Indian Troops. There are in the colonies, mostly in China, Malaya and Malta, 192 officers and 5,057 men of Colonial and Indian troops attached to the British Army. The units are mostly Infantry although there are some Artillery.

e. Non-Combatant Branches.

(1) Army Medical Corps. The Royal Army Medical Corps, with the strength of 435 officers and 3,973 men, provides the strictly medical personnel for the military hospitals, staffs, etc., in time of peace. War units are not formed in time of peace and tables of organization therefor are not published. In general a complete evacuation service is provided for. Each Infantry division has three Field Ambulances, each consisting of a headquarters and two companies. The headquarters establishes the main dressing

Par. 3 e (1).

station and has an ambulance section to pick up wounded at advanced dressing stations. Each company has the bearer squads and equipment to establish one advanced dressing station. A Motor Ambulance Convoy, a GHQ unit, moves casualties from main dressing stations to Casualty Clearing Stations and from these Stations to Ambulance Trains, which take casualties to General Hospitals.

- (2) Army Service Corps. The Royal Army Service Corps, with a strength of 454 officers and 7,056 men, is responsible for the storage and issue of fuel, light, rations and general supplies, for transportation, including the repair of vehicles assigned thereto, and for the allotment and care of barracks and quarters. It is divided into the Supply and Transport Sections, each of which in peace is divided into a large number of organizations of various types and strengths. Full details of war organization are not available. In the division the Service Corps units consist of one Ammunition (Transport) Company, with one section for small arms and one for each Artillery brigade (or regiment); one Baggage Company, with one section for divisional troops and one for each Infantry brigade; and one Supply Company, with sections as in the Baggage Company. Organizations for corps and higher units are unknown.
- (3) Army Ordnance Corps. The Royal Army Ordnance Corps, with a strength of 530 officers and 4,123 men, provides, maintains and supplies barrack, camp and warlike stores, clothing, and vehicles other than those driven by personnel of the Royal Army Service Corps. The term, "warlike stores", includes many technical items, such as weapons, ammunition, and electrical, bridging, and gas defense equipment. In the field, there are Ordnance staff officers with each echelon. The corps has one Army Field Workshop provided for each division. There are no Ordnance units within the division.
- (4) Army Educational Corps. The Army Educational Corps, consisting of 109 officers and 461 warrant officers and sergeants, and assisted by 279 Queen's Army Schoolmistresses, provides adult general education for enlisted men and schooling for service children where other facilities do not exist.
- (5) Other Branches. There are in addition the following branches whose functions are similar to corresponding ones in our service:

	Officers	Men
Military Police		512
Royal Army Chaplains' Department	135	
Royal Army Pay Corps	184	780
Royal Army Veterinary Corps	21	95
Army Dental Corps	129	181

f. Second Line Forces.

(1) Regular Army Reserve.

(a) The Regular Army Reserve of Officers consists of physically fit retired Regular Army officers who are younger than certain specified ages.

(b) The Army Reserve consists of enlisted men who have served with the Regular Army. There are three classes. The largest is Section B, for men who enlisted for 12 years of which from six to eight years is with the

Par. 3 f (1) (b).

colors and the remaining with the Reserve. Reservists are paid from 19 to 38 cents per day and are subject to not more than 12 days training a year.

(2) Territorial Army. The Territorial Army corresponds very closely to the National Guard in our service. In time of war it is subject to call for service anywhere. The two Antiaircraft Divisions are responsible for the ground defense against aircraft of London and other industrial areas. The Coast Defence units are responsible for manning all coast defense installations in the United Kingdom. The 12 Infantry divisions, each recruited from a divisional area, two Cavalry brigades, and certain Army troops, form the second line of defense at home. There has been a considerable increase in the interest in this force during the past year. Recruiting has been more satisfactory and great efforts are being made to replace present equipment, most of which is of World War design.

(3) <u>Territorial Reserve of Officers</u>. The Territorial Reserve of Officers consists of retired officers of the Territorial Army under specified

ages. Training is voluntary.

- (4) <u>Supplementary Reserve</u>. The Supplementary Reserve consists of officers and men required to augment the Regular Army on mobilization. There are two general classes: The Infantry Reservists are trained for 26 weeks upon enlistment and thereafter 14 days a year. The other Reservists are in general tradesmen (specialists) who have been given special military training for their mobilization duties or whose civil occupations correspond thereto. They receive limited or no training. Enlisted men receive annual gratuities of from \$30 to \$100 and officers of from \$100 to \$125, with full pay of grade while on active service.
- (5) Officers Training Corps. The Officers Training Corps is similar to the Reserve Officers Training Corps in our service, with Senior and Junior Divisions. Training is carried out throughout the school year and in camps of from 10 to 15 days' duration.
- (6) Colonial Militia. The Militia in Bermuda and Malta provide limited local defense.

4. Equipment.

- a. Individual. The individual equipment of officers includes a revolver, caliber .38, 18 rounds of ammunition, steel helmet, gas mask, rations and water. The Infantry rifleman is equipped with a rifle, caliber .303, bayonet, 70 rounds of ammunition, steel helmet, gas mask, rations in ration bag, water in water bottle, and equipment in a haversack and web pack. The greatcoat is not carried but borne in organization transport. One pair of socks is the only clothing not worn. The maximum weight worn and carried equipment totals 55 pounds. The arms and equipment of enlisted men in other branches vary widely.
- b. Organizational and Tactical. The equipment in the British Army is now being changed from that inherited from the World War to modern types. In general it can be said that this modernization is proceeding very slowly. Some units of the Regular Army at home have been reequipped to some extent,

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but almost no modern types have been issued to the Territorial Army, although it has been promised the same types as the Regular units.

(1) Infantry hand arms. Riflemen are armed with the Lee-Enfield rifle, caliber .303, weighing 8 lbs., $10\frac{1}{3}$ cz., empty, with a sword-bayonet. Its maximum muzzle velocity is 2,400 f.s. The standard pistol is a 6-shot revolver, caliber .38.

(2) Machine guns. Infantry machine gun battalions now in existence are armed with the 48 Vickers heavy machine gun, caliber .303; and where not replaced by the Bren each Infantry rifle company is equipped with eight Lewis light machine guns of the same caliber. These are both World War types. The Bren light machine gun, of Czechoslovakian design, was adopted as standard in 1935 and is just getting into production. It is caliber .303, is gas operated, is 45 inches long, weighs 21 pounds, and has a rate of fire of 500 rounds per minute. Ammunition is fed from a curved magazine carrying 30 rounds extending above the chamber. It is normally fired from a bipod, but may be mounted on a tripod, an antiaircraft mount or on an armored automotive carrier. See paragraph 3 d (6) (b) for rate of issue.

(3) Antitank guns. Two types of antitank guns have been put into production although but limited numbers have been issued. The Boys antitank rifle is an ordinary bolt action magazine rifle, caliber .55, firing a 930 grain armor piercing bullet at an undisclosed muzzle velocity probably about 3,000 f.s. It is claimed that it will perforate 3/4-inch armor at 1,000 yards at an angle of 45°. Its rate of issue is one to each platoon or similar unit commanded by a subaltern. The Vickers-Armstrong 2-pounder antitank gun is a semi-automatic, caliber 40-mm. (1.57-inch) with a muzzle velocity of 2,400-2,600 f.s., and a rate of fire of 22 shots per minute. It is carried on two rubber-tired wheels, towed by a 3/4-ton truck. For firing it is lowered to three outriggers. See paragraph 3 d (2) (b) for rate of issue.

(4) Light antiaircraft guns. Light antiaircraft batteries are now equipped with Lewis machine guns with tripod mounts. When available, it is rather certain that a larger caliber weapon will be issued. Fairly authentic reports indicate that it may be the Swiss Oerlikon 20-mm. (.80-inch) automatic cannon; while a Vickers 40-mm. automatic cannon will soon be placed in production, although this may be used for fixed antiaircraft defense only.

(5) Antiaircraft guns. The 3-inch, 20-cwt. mobile gun, a slightly modified World War type, is now issued to all gun batteries. A new mobile 3.7-inch gun is now in production and should be issued to units early in 1938. It fires a 28-pound projectile with a muzzle velocity of 2,700 f.s. It is carried on two bogies with four rubber tired wheels. For firing the bogies are removed and the carriage rests on four outriggers. For fixed antiaircraft defenses a 4.45-inch gun of unknown characteristics will go into production during 1938.

(6) Antiaircraft fire control equipment. Both Vickers and Sperry directors are standard. Delivery on an order for 130 Sperry units to be manufactured in the United States started in May, 1938, and will continue into 1939. At least an equal number of Vickers units will probably be available in England by early 1939.

(7) Antiaircraft searchlights and sound locators. The standard searchlight is 90-cm. (35.5-inch) and is generally considered somewhat

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unsatisfactory. There are several models of sound locators with four paraboloid horns with acoustic correctors.

(8) Field Artillery weapons. The following tabulation contains data pertaining to the principal Field Artillery weapons, although there are minor variations between different models of the same gun:

Туре	Cal. Ins.	M.V. f.s.	Wt. proj. Lbs.	Max. elev.	max. range yards	Normal (a) assignment
13-pounder gun	3	1,700	12	160	8,700	Horse artillery.
18-pounder gun	3.3	1,615	18를	3730	9,400	Divisional artillery
25-pounder gun	3.45	1,500	25	3750	12,000	(b)
3.7-inch howitzer	3.7	973	20	40°	6,000	Horse artillery
4.5-inch howitzer	4.5	1,000	35	45°	6,800	Divisional artillery
60-pounder gun	5	2,130	60	35°	16,000	Army artillery
6-inch howitzer	6	1,400	- 86	45°	11,400	ditto
6-inch gun	6	2,350	100	38°	19,200	ditto
8-inch howitzer	8	1,500	200	45°	12,400	ditto
9.2-inch howitzer	9.2	1,600	380	50°	13,935	ditto

(a) See paragraph 3 d (2) for further information.

(b) This gun at present is an 18-pounder relined for the larger caliber.

A completely new weapon is under design. It is expected that it will have a maximum range of 12,000 yards and that it will be a single gun to replace the 18-pounder guns and the 4.5-inch howitzers in the divisional artillery.

Most of these guns are of World War types and there are large numbers on hand. A number of these have been modernized by changes in wheels to permit mechanical traction.

(9) Artillery prime movers. Dragon tractors are the only vehicles now issued to units for towing artillery. Though subject to some variations, there are two types. The light Dragon, with a full-track chassis similar to that of the light tank, Mark II, is used for transporting divisional artillery. The Dragon, with a chassis similar to that of the medium tank, is used for medium artillery. Recent reliable reports indicate that the $l\frac{1}{2}$ -ton, six wheeled, Morris truck will be adopted to replace the light Dragon and that a 3-ton, six wheeled Scammel truck will be adopted to replace the Dragon; it being felt that costs are lower and characteristics satisfactory.

(10) Trench Mortars. The 3-inch trench mortar is a World War weapon. There is about to come into production a 2-inch trench mortar weighing about 22 pounds with a range of about 500 yards to serve as an Infantry close support weapon. Ammunition probably will be issued in the proportion of three

smoke to one high explosive shell.

(11) Tanks. While there are a number of obsolete and experimental tanks, two types only are standard for issue and generally in the hands of units. The Vickers-Armstrong light tank, Mark VIB, is standard for Mechanized

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Cavalry regiments and for Light Tank units. It weighs about five tons, is about 13 feet long, and is powered with a 35-h.p. water cooled engine and has a speed of 45 m.p.h. It carries a crew of three. Armament and armor are unknown. The medium tank, Mark II, weighs $14\frac{1}{2}$ tons loaded, has a speed of about 16 m.p.h., and is powered with an 80-h.p. air cooled engine. Its armor varies from 8- to 15-mm.; and it carries one 3-pounder gun and three cal. .303 machine guns. It has a crew of five. When the gun is replaced with a 3.7-inch mortar this tank is termed "close support". See paragraph 3 d (7) for rate of issue.

(12) Armored cars. A limited number of obsolescent types of armored cars are in the hands of Cavalry units in Egypt and Iraq. Apparently no more

are to be purchased.

(13) Engineer equipment. Engineer troops are armed as Infantry. Special Engineer equipment, much of it of post-war design, is available in reasonable quantities. More important items are special kapok footbridges for Infantry use, motorized pontoon bridge trains, and special box girder bridges for tanks.

(14) Chemical Warfare equipment. An adequate number of service gas masks are on hand. Little is known of equipment for offensive action, but it is believed that considerable planning has been done, and that the use of chemicals by artillery shell, trench mortar or by spraying from aircraft could

be carried out if necessary.

(15) Means and Sufficiency of Transportation. With extremely limited exception all transportation is motorized. A considerable amount of motor transportation is in the hands of units or in depot reserve, but the remainder needed would be available by requisition from industry under a system of peace time registration.

5. Training, Efficiency and Morale.

a. Training. (1) Military Schools. Name	Location	Duration principal course
Royal Military Academy (Note i)	Woolwich	18 mos.
Royal Military College (Note i)	Sandhurst	18 mos.
Imperial Defence College (Note ii)	London	l yr.
Staff College	Camberley	2 yrs.
Senior Officers' School	Sheerness	3 mos.
School of Equitation	Weedon	10 mos.
Riding Establishment	Woolwich	18 mos.
School of Artillery	Larkhill	4 mos.
Coast Artillery School	Shoeburyness	11 wks.
School of Military Engineering	Chatham	33 mos.
Railway Training Center, Royal Engineers	Longmoor	3 yrs.
School of Electric Lighting (Searchlights)	Portsmouth	14 wks.
Antiaircraft Defence School	Biggin Hill	6 wks.

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Name (Military Schools)	Location	Duration
School of Signals	Catterick	13 wks.
Armored Fighting Vehicles School	Dorsetshire	3 mos.
Small Arms School	Salisbury	2 mos.
Military College of Science	Woolwich	27 mos.
Royal Army Service Corps Training Centre	Aldershot	1 yr.
Royal Army Ordnance Corps School of		
Instruction	Hilsea	1 yr.
Physical Training School	Aldershot	3 mos.
Royal Military School of Music	Kneller Hall	3 yrs.
School of Cookery	Aldershot	3 mos.
Army Technical School (Boys!)	Beachley	
School for Training Instructors	Shorncliffe	10 wks.
Royal Army Medical College	London	6 mos.
Army School of Hygiene	Aldershot	4 mos.
School of Dispensing	Aldershot	4 mos.

- Note i: Woolwich prepared cadets for commissions in the Royal Artillery, the Royal Engineers or the Royal Corps of Signals; and Sandhurst for the Cavalry, the Infantry, the Royal Tank Corps, or the Indian Army.
- Note ii: The Imperial Defence College has as students officers of the three fighting services and certain civilian officials.
- (2) Nature of Training for Officers. The training of officers varies considerably between branches and between individual officers. Practically all come from the aristocracy or the upper middle class. About three-fourths enter the Army through Woolwich and Sandhurst. While some of the cadets in these schools are from other secondary schools or from the ranks, most of them enter from the public schools (corresponding to "private" schools in this country) which maintain very high educational and disciplinary standards. Cadets, except for those from the ranks, enter Woolwich and Sandhurst during their 18th year for a course of 18 months. Upon graduation their educational qualifications compare favorably with those of graduates of West Point but their military education is inferior. Most newly commissioned officers are sent to branch schools for courses that vary in length from two months at the Small Arms School to nearly three years at the School for Military Engineering. However, in the Infantry and Cavalry, the largest branches, officers below the rank of major who are not selected for the Staff College normally attend only the Small Arms School with a limited number of Cavalry officers taking the course at the School of Equitation. In general there are no unit schools for young officers, but many take private correspondence courses to prepare themselves for promotion and Staff College examinations. However, most officers below the field grade receive their principal training in the course of regimental duty. This results in a satisfactory knowledge of the technique and minor tactics of their own branches but they learn little

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of those of other arms. On reaching field grade most combatant officers attend the three months course at the Senior Officers' School. Training for staff and high command duty starts in the Staff College. About 50 officers enter each year for the two-year course as determined by a competitive examination limited to officers with six years commissioned service who are less than 34 years of age and who have been specially recommended. Beginning in 1939 the College will be broken into two wings. Each year about 120 students entering at a younger age will take a one-year course in the Junior Wing. About 55 will take a second year in the Senior Wing. The only further military education is at the Imperial Defence College attended by five officers from each of the three services and 15 from other sources. The objective of the training of Army officers is to give all of them extensive practical experience with troops, varied by an increasing amount of academic instruction, in the technique and tactics of their own arms; with about one fourth of the total number well trained for staff and high command duty.

(3) Nature of Training for Enlisted Men. Upon enlistment most recruits go to a regimental or branch depot for a course of training of from 14 to 18 weeks. Here they are given intensive instruction in discipline, drill, use of weapons, physical drill and other basic military subjects. They are then qualified to take their places in their units and carry out the regular training schedule. Training of enlisted men within units has as its dual objective the development of disciplined, physically fit and self-reliant soldiers and the qualification of each man in the duties that he would probably have in time of war. Practically all of this training is given by non-commissioned officers of the unit under the close supervision of officers. Key specialists are given special courses in service schools. Illiterates are given general education courses and men physically substandard attend a

school for physical improvement.

(4) Unit and Combined Training. The annual training of units begins with individual training and progresses upward through the platoon to that of the highest unit stationed at one post, which in the case of the Infantry is usually the brigade. On alternate years divisions at home are brought together for combined training which culminates in maneuvers between two or more divisions. In addition to normal combat training, considerable attention is given to exercises in mobility, to coordination with mobile forces and to defense against tanks and aircraft. During the winter months all officers carry out extensive and valuable Tactical Exercises Without Troops which are similar to our tactical exercises. In general the standard of training of companies and battalions is high; but that of the combined arms less satisfactory. Maneuvers of large units have been handicapped by the lack of modern arms and equipment and by the absence of the large conscript armies that on the Continent give commanders and staffs such valuable training. For these

(5) Training of Territorial Army and Reserves. Training in the Territorial Army varies between the branches. Taking the Infantry for example, recruits must attend armory drills for 40 hours and complete the recruits' small arms firing course. Thereafter they must drill for 10 hours a year. All officers and men must attend the annual training camps for a period

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of from 8 to 15 days. Lack of modern equipment, especially in the Antiair-craft Divisions, has seriously hampered training in the Territorial Army and it is less well prepared for modern warfare than the Regular Army. Training requirements for the Reserves vary widely and are covered generally in paragraph 3 f.

b. System of Promotion of Officers. Combatant officers are promoted without examination to the rank of lieutenant after three years' service; to the ranks of captain and major by seniority within regiment or corps, subject to examination; and to all higher ranks by selection. Below the grade of lieutenant-colonel a limited number of officers may be given accelerated promotion for outstanding ability. Officers failing to pass promotion examinations must resign within a stated period. All officers must retire for agein-grade, varying from 50 years for captains and lieutenants to 67 years for lieutenant-generals and generals. Rules for promotion of non-combatant officers vary greatly, but generally promotion is for length of commissioned service.

c. Efficiency

(1) Officers. British Army officers have a high esprit de corps and a tradition of distinguished service in combat. The professional qualifications of a majority of them are somewhat limited by the extent of the military education and training received. In general they are somewhat less efficient than officers of the principal continental armies, but they make up for that in part by their excellent qualities of leadership.

(2) Men. The efficiency of noncommissioned officers is very high. The rank and file have a high state of discipline but their training for com-

bat is somewhat limited.

d. Morale. The peace time morale of the British Army is satisfactory. The British characteristics of courage, tenacity and self-reliance, and traditions of past wars make for a high morale in time of war.

6. Mobilization Plan.

a. Methods of Recruitment.

(1) Officers.

(a) Regular Army. About three-fourths of the combatant officers enter from the cadet colleges, the remainder by competitive examination from universities, from the ranks, or from officers of the Territorial Army or Supplementary Reserve. Non-combatant officers are appointed from civil life or by transfer from combat branches.

(b) Reserve Forces. Officers are commissioned in the Territorial Army from the Officers' Training Corps or from the ranks of the Regular Army, the Supplementary Reserve or the Territorial Army.

(2) Men. Enlistment of men is voluntary in time of peace in all

components.

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- b. System of Mobilization of Man Power. Present laws provide only for mobilization of man power by calling to the colors all reserve forces and reliance on voluntary enlistments. However, it is rather certain that conscription will be early resorted to.
- c. Expansion of Existing Units. Existing units will be brought up to war strength by calling out reserves and by voluntary enlistments.
- d. New Units to be Created. Nothing is known of plans for the creation of new units. After the full mobilization of existing units it is probable that following the World War precedent new battalions will be formed for the existing Infantry regiments and that new units will be created for the rest of the Army.
- e. Rate of Development of Man Power. The following estimate of the rate of development of man power for the Army (excluding requirements of the Navy and Air Force) is based upon present organized forces, the experience of the World War, and the assumption that conscription would be instituted by 120M:

Time	Number mobilized	Expeditionary Force available
M-Day	150,000	
15M	500,000	40,000
3014	550,000	60,000
60M	700,000	80,000
120M	1,200,000	150,000
180M	1,500,000	250,000
360M	2,200,000	600,000

f. Reserve Supplies. Details of reserve supplies on hand are not known. It is known that large supplies of artillery, artillery ammunition, small arms and similar items are on hand from the World War; and that under the present rearmament program additional reserves are being built up at an unknown rate. New reserves already available probably are principally ammunition for it is known that new artillery, small arms and tanks are not yet available in quantities sufficient even for issue to troops. It is reasonable to assume that complete war reserves, mostly of World War manufacture, are available for the five divisions and the Mobile Division of the Regular Army at home; and that partial reserves are available for the Territorial Army.

g. Method and Rate of Procurement of Supplies.

(1) General. Military supplies are in the main manufactured in civil plants, the governmental establishments being maintained principally for research and development and for the manufacture of special items. At the present time civilian armament firms are in a state of semi-mobilization and most of them are tooling up and expanding their plants. It is believed that most have not started quantity production, but that they will be able

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to do so during the present year. With this preparation industry as a whole will be in an excellent position to supply the services and it is believed that in any war in the near future procurement will keep pace with the development of man power.

(2) Governmental Establishments. The following tabulation lists the government establishments now in operation for production of supplies for the Army:

Royal Gun and Carriage Factory Woolwich
Royal Ammunition Factory Woolwich
Royal Filling Factory Woolwich
Royal Small Arms Factory Enfield
Royal Gunpowder Factory Waltham Abbey
Pivotal Plant Center Blackpole

In addition to the above there are ten Royal Ordnance Factories being constructed or reconstructed in connection with the rearmament program. All factories are administered by the Director-General of Munitions production and manufacture and repair guns, tanks, ammunition, etc., for the three Services, India and the Dominions.

(3) <u>Private Establishments</u>. The following are the principal private firms manufacturing munitions:

(a) The Vickers-Armstrong Company manufactures tanks, tractors, automobiles, cannon of all kinds, machine guns, artillery carriages, fire control instruments, internal combustion engines of all types, and various types of heavy machinery.

(b) The Hadfield Company and the Firth Company produce armor

piercing and heavy projectiles.

- (c) The Birmingham Small Arms Company produces Enfield rifles and Lewis machine guns, as well as motorcycles, bicycles and similar equipment.
- (d) The Barr and Stroud Company of Glasgow produces range finders, height finders, binoculars, periscopes and all sorts of fire control and optical equipment.
- (e) The Imperial Chemical Industries, Ltd., controls the chemical industry of Great Britain and with its various subsidiaries produces all war material in the chemical field.
- h. System of Mobilization of Industry. There is in Great Britain no known coordinated system of mobilization of industry for war. The Minister for the Coordination of Defence, with the secretariat of the Committee of Imperial Defence as his working staff, has the function of coordinating the procurement of supplies (see paragraph 1 c); but as far as known he has solved the problems as they arise and no general system of allocation of manufacturing facilities and supplies has been devised. At present the procurement agencies of the three defense services are purchasing independently under differing methods and without any system of priorities. However, the absence of a coordinated system is not preventing the conversion of civil plants to specific purposes and while it will not work so smoothly, the result of the

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present rearmament program will be to make the general mobilization of industry in case of war merely an additional step.

7. Theory of Combat.

- a. Conception of the Conduct of War. British organization and doctrine contemplate two types of wars; small wars in which the Regular Army initially and possibly the Territorial Army later can furnish all necessary troops; and large wars where the entire man power and resources of the nation are mobilized.
- b. Role of the Different Arms in Battle. Infantry, strong in fire power, is the nucleus for combat and must in the end confirm success in war. But to an increasing degree infantry requires the support and close cooperation of other arms. Artillery in considerable strength is especially necessary. Mechanized forces equipped with light and medium tanks carry out reconnaissance missions before battle is joined, protect flanks, and are available for use as powerful striking forces for attacks against enemy artillery areas or his supply and command installations, or for use in explointing a success. A limited number of tank units are available for close support of infantry; and when available in sufficient numbers heavier tanks may be used in mass attacks on a narrow front through enemy main battle lines. The requirements for the protection of home industrial areas will probably preclude the assignment initially of large masses of aviation to field forces, but those available able will be used to gain and maintain the supremacy of the air, to provide command and artillery observation, and to attack by bombing enemy reserves and supply and transport installations in the rear areas. Adequate protection against enemy mechanized forces must be provided. It is probable that chemical warfare will be carried out if initiated by the enemy. The use of horse cavalry in any numbers in wars in continental Europe is not contemplated.
- c. Method of Conducting Combat. British combat doctrine is based upon a mobile and aggressive offensive. Preceded by mechanized units, the main body with motorized transport will advance rapidly to meet the enemy. In the meeting engagement a coordinated attack, usually on a flank, will be delivered at the earliest possible time. Position warfare will be avoided if at all possible. The defensive will only be assumed as an expedient to delay the enemy until the arrival of reinforcements or for other tactical reasons. This doctrine has many advantages but the present somewhat unsatisfactory state of organization and of training in modern warfare, the fact that in a large war the field force may again be used initially as a delaying force in France, and that historically British troops have almost always fought defensively make this ideal of combat more theoretical than real. There is a school of thought that defensive tactics and the use of the counteroffensive should be given increased attention as being more practical in the present condition of affairs. This attitude has not been incorporated in official doctrine.

III. AIR FORCE.

8. Personnel.

a. Estimated Strength of Components. The following is the estimated actual strength of the Royal Air Force as of June 1, 1938:

	Active	Reserve	Total
Royal Air Force (exclusive			
of India)			
Officers	6,250		6,250
Men '	66,000		66,000
Auxiliary Air Force	1 . 10 1 1 2	100	
Officers	1 1 1 1	365	365
Men		2,100	2,100
Royal Air Force Reserves	20 1 - 1 - 1		
Officers	144	1,750	1,750
Men		11,400	11,400
Totals	72,250	15,615	87,865
Royal Air Force in India			
Officers	265	1000	265
Men	1,900	100000	1,900
TOTALS	74,415	15,615	90,030

9. Organization.

- a. Command. The Royal Air Force is commanded by the Air Council.
- Air Ministry.
 (1) Organization. See Appendix 2, Organization of the Air Ministry, for a diagrammatic representation of the organization of the Air Ministry.
 - (2) Air Council. The Air Council consists of:

Secretary of State for Air Parliamentary Under-Secretary of State for Air

Vice-President

President

Chief of the Air Staff Air Member for Personnel

Air Member for Research and Development Air Member for Supply and Organization

Permanent Under-Secretary of State for Air

(3) Departmental Functions. In general the four military Departments of the Air Ministry combine the functions of a general staff and of

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the chiefs of branches. Their duties are indicated by their titles. The Department of the Chief of the Air Staff is divided into the Directorates of

Operations and Intelligence, of Staff Duties, and of Signals.

(4) Tactical Organization. The Air Force is divided into Commands, which at home depend upon tactical functions and overseas are territorial. At home the Commands are divided into groups which consist of various numbers of squadrons, in some cases as high as 20. (Also see Appendix 2.) It is believed that in time of war each group would be formed into two or more wings. The following tabulation gives the numbers of tactical units, but omits schools and small miscellaneous units:

			Tot	al N	umbe	rs					
Commands	Groups	Squadrons (1)									
AT HOME:		В	F	AC	BT	TB	GR	С	FC	FCB	U
Bomber Fighter	6 Bomber 2 Fighter 1 Army Co-Op. 1 Balloon Barrage (2)	65	29	7				1			1 2
Coastal	1 Reconnais- sance 1 Training Fleet Air Arm not grouped					2	11 1		4	7	
Training (3							1		1		
Totals at H	ome	65	29	10		2	13	1	4	7	3
OVERSEAS:					3						
Middle East Palestine a Iraq India Mediterrane Aden	nd Trans-Jordan	5 2 3 4	2	4	1		1		4	4	
Far East (S	ingapore)					2	2		3	2	
Total Overs	eas	15	2	5	2	2	4		7	6	
GRAND TOTAL	S (4)	80	31	15	2	4	17	1	11	13	3

(1) Key to symbols: B - Bomber; F - Fighter; AC - Army Cooperation; BT - Bomber-Transport; TB - Torpedo Bomber; GR - General Reconnaissance; C - Communications; FC - Catapult Units (some flights only), Fleet Air Arm; FCB - Carrier-borne, Fleet Air Arm; U - University.

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Commands	Groups	Squadrons (1)									
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Bomber Fighter	6 Bomber 2 Fighter 1 Army Co-Op. 1 Balloon Barrage (2)	65	29	7				1			1 2
Coastal	1 Reconnais- sance 1 Training Fleet Air Arm not					2	11				
Training (3)	grouped 3 Training 1 Armament						1		4	7	
Totals at Hor	ne	65	29	10		2	13	1	4	7	3
VERSEAS:											
	(Egypt) d Trans-Jordan	5 2 7	2	1	1		1				
Iraq India Mediterranean	n (Malta)	3 4		4	1		1		4	4	
Aden Far East (Sin	ngapore)	1				2	2		3	2	
Total Overses	as	15	2	5	2	2	4		7	6	
GRAND TOTALS	(4)	80	31	15	2	4	17	1	11	13	3

⁽¹⁾ Key to symbols: B - Bomber; F - Fighter; AC - Army Cooperation;
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Fleet Air Arm; FCB - Carrier-borne, Fleet Air Arm; U - University.

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(Continuation of Notes for table on preceding page.)

(2) Ten Auxiliary Air Force Balloon Barrage Squadrons will be recruited during 1938. Of these six now exist in skeleton form.

(3) The Training Command conducts all schools (see paragraph 11 a) and a number of experimental and maintenance units.

- (4) There are at home a total of 119 Air Force combat squadrons, seven
 Fleet Air Arm carrier-borne squadrons and four Fleet Air Arm catapult units; overseas a total of 30 Air Force squadrons, six Fleet
 Air Arm carrier-borne squadrons and seven Fleet Air Arm catapult
 units; making a total of 149 Air Force squadrons, 13 Fleet Air Arm
 carrier-borne squadrons, and 11 Fleet Air Arm catapult units. See
 paragraph 9 g. for details of Fleet Air Arm.
- c. <u>Combatant Branches</u>. The General Duties Branch is the only combatant branch and includes all personnel for operating and servicing aircraft. It constitutes over 85 per cent of the total strength of the Air Force.
- d. <u>Mon-Combatant Branches</u>. The Equipment, Accountant, Chaplains, Legal, Medical and Dental Branches are non-combatant and their duties are indicated by their titles.
- e. <u>Squadron Organization</u>. Details of personnel strength of squadrons are not available. In general fighter squadrons have 14 planes active and seven in squadron reserve, while other combat squadrons have 12 active and six in reserve.

f. Second Line Forces.

(1) Auxiliary Air Force. The Auxiliary Air Force is comparable to the Territorial Army and is organized into 11 bomber, five fighter and three army cooperation squadrons and one balloon barrage group, this last just being organized. The squadrons are integral parts of the regular Air Force groups and are included in the tabulation in paragraph 9 b (4).

(2) Reserves. The Reserve of Air Force Officers consists in the main of regular officers who have resigned or of short service officers who have completed their active service. The Royal Air Force Reserve consists of enlisted men who have completed their period of active service under the terms of their enlistment, or who have enlisted specially for the Reserve.

g. <u>Fleet Air Arm</u>. The Fleet Air Arm as now constituted, consists of three fleet-fighter and ten torpedo spotter-reconnaissance squadrons, all carrier-borne, and ll separate units (mostly flights) of catapult planes. At sea it is under control of the Royal Navy but reverts to the control of the Air Force upon return to land bases. On July 30, 1937, announcement was made in the House of Commons that it would revert to the complete control of the Navy, where it would be called the Air Branch of the Royal Navy. This transfer has not yet taken place pending determination of certain details but will probably be completed during 1938.

10. Equipment.

a. Individual. Normal flying equipment is issued. All personnel are armed with rifle or pistol.

b. Aircraft. The following tabulation lists the aircraft now in the hands of or soon to be issued to combat squadrons, with some characteristics. Where the name is followed by an asterisk (*) the plane is an advanced type, usually a monoplane developed under the rearmament program, which has not as yet been issued to units in any numbers. Others are in general obsolescent types of biplanes.

Type and Name	Crew	Max. speed mph.	Service ceiling feet	Range		No. and caliber MG's.	No. engines & h.p. each
FIGHTER							
Hawker Fury Hawker Nimrod Hawker Demon Gloster Gauntlet Gloster Gladiator Hawker Hurricane * Supermarine Spitfire * OBSERVATION	1 1 2 1 1 1 1	207 192 185 223 255 318 348	29,200 26,900 28,500 35,600 35,000 30,000 ?	280 280 340 370 330 380 ?	0 0 80 80 80 80 80	230 230 230 230 430 6303 8303	1 - 640 1 - 640 1 - 640 1 - 645 1 - 840 1 - 1050 1 - 1050
Westland Wapati Hawker Osprey Hawker Audax Hawker Hector Blackburn Shark Supermarine Walrus (1) Avro Anson * Westland Lysander *	2 2 2 2 2 2 2	160 175 169 190 148 123 188 215	27,000 25,400 21,500 24,200 15,650 18,500 21,400 ?	500 400 500 440 440 300 600 ?	500 0 0 1 5 00 500 200 ?	230 230 230 230 230 230 230	1 - 565 1 - 640 1 - 640 1 - 790 1 - 810 1 - 750 2 - 355 1 - 890
Hawker Hart Fairey Gordon Vickers Vincent Hawker Hardy Hawker Hind Bristol Blenheim * Fairey Battle * Blackburn Skua * (2) Hawker Henley *	2222222222	168 136 141 163 189 279 257 ?	21,320 16,000 19,500 18,000 26,000 30,000 25,000 7 31,400	500 460 600 450 440 800 1000 ?	500 0 1000 500 500 1000 1000 500	230 230 ? 230 330 230 ?	1 - 525 1 - 565 1 - 635 1 - 525 1 - 640 2 - 840 1 - 1050 1 - 840 1 - 1050

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(cont.)							
Type and Name	Crew	4.4	Service ceiling feet	Range miles	Bomb load lbs.	No. and caliber MG's.	No. engines & h.p. each
HEAVY BOMBERS							
Handley Page Heyford II Boulton Paul Overstrand Fairey Hendon Vickers Wellesley * Armstrong Whitworth * Whitley I and II Handley Page Harrow * Handley Page Harroden I* Vickers Wellington * PATROL (FLYING BOATS)	3 4 2 5 5	142 148 154 229 216 200 260 270	18,700 21,300 19,100 32,500 19,200 19,200 ? 32,000	800 500 800 1200 1200 1300 ?	2000 1000 1500 2000 2000 2000 2000 2000	330 230 330 230 330 430 430 430	2 - 640 2 - 635 2 - 640 1 - 925 2 - 840 2 - 830 2 - 925 2 - 900
Supermarine Scapa Short Singapore II Saunders Roe London Supermarine Stranrear TORPEDO-BOMBER	5 5 5 5	144 135 135 153	14,950 13,400 14,700 18,500	900 800 800 900	0 0 1100 2200	330 330 330 330	2 - 500 4 - 730 2 - 830 2 - 830
Vickers Wildebeest Blackburn Shark Fairey	? ?	141 131 144	16,250 15,000 16,500	330 280 800	1500 1500 1500	230 230 230	1 - 555 1 - 555 1 - 750

Notes: (1) Amphibian flying boat.

(2) Dive bomber-fighter.

11. Training, Efficiency and Morale.

a. Training. (1) Schools:

Imperial Defence College (See Note i, par. 5 a.)
Royal Air Force Staff College, Andover
Royal Air Force College, Cranwell
Electrical and Wireless School, Cranwell
Equipment Training School, Cranwell
Schools of Technical Training (two in number)
School of Physical Training, Uxbridge
School of Naval Cooperation, Ford
Flying Training Schools (eleven in number)
School of Photography, Farnborough
School of Cookery, Halton

Par. 11 a (1).

Schools (cont.)

School of Army Co-operation, Old Sarum
School of Air Navigation, Manston
School of Aeronautical Engineering, Biggleswade
Central Flying School, Upavon
School of General Reconnaissance, Thorney Island
Anti-gas School, Uxbridge
Air Armament School, Eastchurch
Air Observers School, North Coates
Armament Training Stations (nine in number)
Elementary and Reserve Flying Training Schools
(23 in number)

(2) Nature of Training for Officers. Permanent officers appointed from the Royal Air Force College have completed a two-year course which includes 70 hours of solo flying. Short service officers must first complete an eight weeks' course in a civil flying school (under contract to the Royal Air Force), with 25 hours dual and 25 hours solo flying. They are then commissioned and enter the Flying Training Schools for about 30 weeks of intermediate and advanced flying instruction, after which they are assigned to squadrons. Further training of short service officers is almost entirely in squadrons. Permanent officers may take the courses at the technical schools and later enter the Staff College. In general officers specialize on certain types of aircraft and are not expected to be able to fly all types. The professional qualifications of officers on entry into the service are lower than in our service; and the academic professional instruction of permanent officers is also somewhat less complete. Squadron training is very thorough but there is very little training of larger units in tactical operations. The objective of the formation of an officers corps with a nucleus of well trained permanent officers and a large body of competent pilots is attained.

(3) Nature of Training for Men. Technical training of airmen, apprentices and boys is given in a large number of schools, with an average of about 13,000 enrolled at one time. This mass education of specialists is made necessary by the rapid expansion of the Air Force. The practical train-

ing of these men and all training of other men is in squadrons.

(4) Training of Second Line Forces.

(a) Auxiliary Air Force. All members annually must attend a training camp of from eight to fifteen days duration and perform from 21 to 25 hours training at home stations. In addition, all officers must carry out

a minimum of 12 hours solo flying annually.

(b) Reserves. Officer and enlisted pilots of the Reserves must perform 12 hours solo flight in service aircraft each year. Other Reserve enlisted men must perform 12 days service each year.

Par. 11.

b. System of Promotion for Officers. (1) Relative Rank. Relative rank with the other services:

Air Force Ranks	Naval Ranks	Army Ranks
Marshal of the R.A.F. Air Chief Marshal Air Marshal Air Vice-Marshal Air Commodore Group Captain Wing Commander Squadron Leader Flight Lieutenant Flying Officer Pilot Officer	Admiral of the Fleet Admiral Vice-Admiral Rear-Admiral Commodore, 1st & 2d Class Captain Commander Lieut-Commander Lieutenant Sub-Lieutenant Acting Sub-Lieutenant	Field-Marshal General LieutGeneral Major-General Brigadier Colonel LieutColonel Major Captain Lieutenant Second Lieutenant

c. System of Promotion. In the General Duties Branch pilot officers, flying officers and flight lieutenants are promoted, subject to examination and certificate of fitness for promotion, to the next higher grade upon completion of 18 months, two years and five years in grade, respectively; except that accelerated promotion for special qualifications may be ordered. Promotion to all higher grades is by selection. Systems of promotion in the non-combatant branches vary widely.

d. Efficiency.

(1) Officers. The officers of the grade of squadron leaders and above are competent and efficient. In general the junior officers have had a somewhat inadequate period of training and are satisfactory pilots only rather than well rounded professional military men. They do, however, perform satisfactorily the squadron duties to which assigned.

(2) Men. The technical specialists are well trained at school and with experience in squadrons reach a high state of efficiency. Others perform their auties satisfactorily. The rapid expansion in enlisted strength has

lowered the average efficiency.

- (3) Combat Efficiency and Value as a Whole. The Air Force rates high in combat efficiency. The British are by nature skillful pilots in combat and their training, equipment and temperament make them the equal of the pilots of other European air forces. Combat efficiency will be increased with the receipt of more modern aircraft.
- e. <u>Morale</u>. The morale of the Air Force is high. Aviation appeals to the British character and the Air Force has the traditions of splendid World War service. It will rise higher as more modern equipment becomes available.

12. Mobilization Plan.

a. <u>Method of Recruitment</u>.

(1) <u>Officers</u>. Regular officers are commissioned from the Royal Air Force College, university graduates, certain cadets from Canada and Australia,

Par. 12 a (1).

enlisted airmen, and from active or reserve officers of the Air Force, Army or Navy. There are two types of commissions. Permanent commissions are given mainly to flight cadets graduating from the Royal Air Force College, with a total of about 50 a year, and a limited number of university graduates. Short service commissions, with four years on the active list and six years in reserve, are given to candidates from other sources. During 1937, 1,190 officers were so commissioned. A limited number of short service officers are given medium service or permanent commissions. Officers commissioned in the Auxiliary Air Force ordinarily are university graduates who have been previously commissioned in the regular Air Force. Reserve officers are either regular officers who have resigned or short service officers who have completed their active service.

- (2) Men. Enlistment is voluntary in time of peace in all components.
- b. System of Mobilization of Man Power. Initially man power will be augmented only by calling reserves to active duty and by voluntary enlistment. It is rather certain that conscription for all services will be early resorted to.
- c. Expansion of Existing Units. Existing units will be brought up to war strength by calling out reserves and by voluntary enlistments.
- d. New Units to be Created. Nothing is known of plans for the creation of new units. After existing units are expanded to war strength it is probable that wholly new squadrons will be created.
- e. <u>Development of Air Personnel</u>. It is estimated that Air personnel, other than pilots, will be available for all requirements at a rate greater than the plane production rate. It is estimated that there are at present about 7,500 regular and reserve military pilots and about 6,000 civilian pilots, of whom a majority have a license for private flying only. It is probable that 10,000 would be the maximum number of military pilots available by 90% (neglecting casualties). Initially newly trained military pilots could be produced at the rate of about 2,000 a year. The production of pilots would be increased later at a rate that cannot well be estimated.

f. Reserve Supplies.

(1) Aircraft. It is believed that the Air Force has adopted the principle of holding in squadron reserve (to replace casualties or provide for overhaul) six planes and in depot reserve 12 planes for every 12 planes normally assigned to a squadron. This provides a total reserve of one and one-half times the numbers assigned to combat squadrons. Since the announced goal is about 1,800 first line aircraft assigned to squadrons by March, 1939, this would provide a reserve of 2,700 first line aircraft. At present there are reasons to believe that reserves of about 2,400 planes are available. Of these a considerable number are modern aircraft, since in some cases planes are placed in storage while squadrons keep older craft, but the majority are

Par. 12 f (1).

obsolescent. As production of new planes progresses it is probable that the proportions of these types will increase. Balloons, winches, etc., for the balloon barrage project are just being delivered and there are no reserves.

(2) Other Supplies. It is estimated that reserves of small arms ammunition, spare parts and general supplies are adequate. Nothing is known of the reserves of bombs. It seems reasonable to assume that considerable reserves have been built up during the last two years.

g. Method and Rate of Procurement of Supplies.
(1) Governmental Establishments. Several experimental and research establishments are maintained, the most important being the Royal Aircraft Establishment at Farnsworth. No aircraft are manufactured in them, except experimentally.

- (2) Private Aircraft Plants. There are at present approximately 20 private plants manufacturing military aircraft and four manufacturing aircraft engines. These plants account for all military aircraft now being produced. After getting properly organized and tooled up for production it is estimated that they have a capacity for producing 600 engines and 450 airplanes a month. However, for the past year production has been much lower. A great deal of time has been spent in tooling up for the manufacture of new types. There have been extensive shortages of skilled labor, machine tools, special steels, etc. Up to March 31, 1938, these plants had produced modern aircraft to equip 44 squadrons, mostly bomber, with an unknown number of planes for depot reserve. Some of the planes issued to squadrons have developed structural defects.
- (3) "Shadow" Aircraft Plants. Feeling that the capacity of the peacetime aircraft industry was inadequate for war, the government announced in March, 1936, a plan for building six principal and about ten secondary "shadow" aircraft factories. Of the main plants, one will make engines and fuselages and assemble planes, one will make fuselages and assemble planes and the others will make engines only. Each main plant is being constructed for the Government by a parent motor car firm near its existing motor car plant and will be operated by the firm for fixed fees. Construction of the plants was started during late 1936 or early 1937. A few engines were made during 1937, but no airplanes will be completed until about the middle of 1938. The plants are most modern and complete, with the best of tool equipment laid out for mass production. It is estimated that the "shadow" plants will have a capacity of about 1,500 planes a year.
- (4) Total Production Capacity. The total British production capacity of military aircraft when plants now building or being reorganized are in normal operation is estimated to be about 7,000 per year; and this probably could be stepped up 25 per cent in an emergency. However, it is probable that this rate will not be reached until late 1938, if then. The estimated production in October, 1937, was 350 planes (at the rate of 4,200 a year), but it is probable that the rate has dropped since then.
- h. System of Mobilization of Industry. With the exception of the establighment of "shadow" aircraft factories, paragraph 6 h applies.

Par. 12 f (1).

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probable that the rate has dropped since then.

h. System of Mobilization of Industry. With the exception of the establishment of "shadow" aircraft factories, paragraph 6 h applies.

13. Theory of the Use of Aviation in War.

a. Conception of the Conduct of Aerial Warfare. The British believe that a general European war will open with mass bombing attacks on strategic enemy objectives, such as dockyards, munitions plants, railroad facilities, etc., probably with the extensive use of chemical and incendiary bombs. As the ground armies join aerial attacks on strategic objectives in rear combat areas will be added to the operations within the zones of the interior. Attacks by enemy aircraft against front line combat elements would be limited; as would cooperation by friendly planes.

b. Roles of Different Categories.

(1) Fleet Air Arm. The Fleet Air Arm will cooperate directly with the Navy in recommaissance, bombing and artillery spotting. Fighter squadrons are provided to protect friendly aviation and to attack enemy planes.

(2) Overseas Commands. Squadrons in the overseas commands will cooperate with land forces or seacoast defenses and will provide a mobile

reserve to be moved to threatened points.

- (3) Metropolitan Air Force. The Metropolitan Air Force, stationed at home, may be used to reinforce overseas commands, but its paramount role is the direct or indirect protection of important strategic areas in the British Isles. The Bomber Command, operating from bases in England, Belgium or France, will attack enemy airdromes and important strategic areas. The Fighter Command, concentrated in airdromes in the vicinity of London and operating with the Territorial Army antiaircraft divisions under unified command, protect London and adjacent industrial areas from enemy bombing attacks. Cooperation squadrons will accompany the Field Force and reconnaissance squadrons will assist in the protection of the coast against invasion.
- c. Method of Conducting Combat. Aircraft at home not assigned to the field forces (see paragraph 7 b) will protect the industrial areas of England against enemy aircraft in two ways. With the antiaircraft units cooperating, and using an extensive warning system, fighters will attempt to intercept enemy bombers before they reach their objectives and the balloon barrage will set up protective zones to destroy planes that may strike the cables. At the same time bombers will attack enemy airdromes, industrial areas and important strategical objectives to hinder attacks on England, hamper the enemy war effort and effect reprisals.

IV. NAVY.

14. Estimated Strength.

Personnel:	1131	ř	
	Officers	Men	Totals
Royal Navy	8,600	93,000	101,600
Royal Marines	500	10,500	11,000
Naval Reserves	2,300	27,000	29,300
Royal Marine Police		900	900
Totals	11,400	131,400	142,800

b. <u>Ships and Armament</u>. The following officially published data as of March 15, 1938, do <u>not</u> include the projected program for fiscal year 1938 of two capital ships, one aircraft carrier, four large cruisers, three small cruisers and three submarines:

	Built (1)			Building and appropriated for		Principal	
	Under age		Total	Approx. tons	No.	Approx.	armament.
Capital ships	15		15	475,000	5	175,000	15"16"
Aircraft carriers	6		6	115,000	5	114,000	4" 6"(2
Large cruisers	15		15	145,000	-		7.5"8"
Small cruisers	25	19	44	266,000	17	126,000	611
Destroyers	89	71	160	200,000	40	70,000	4"4.7"(3
Submarines	39	13	52	54,000	18	18,000	3"5.2"
Total tonnages	-			1,255,000		503,000	

- Notes: (1) Age classification based on London Treaty, 1936.
 (2) Carriers built have a capacity of a total of 194 planes.
 - (3) Most destroyers have two 21-inch torpedo tubes; while submarines have from four to eight tubes.
- c. Air Service. See Section III Air Force, and especially paragraph 9 g for information of the Fleet Air Arm.

15. Organization.

a. <u>Command</u>. The Navy is commanded and administered by the Board of Admiralty, which consists of the First Lord of the Admiralty (the Cabinet member heading the Admiralty), five Sea Lords, one Civil Lord, the Deputy Chief of Naval Staff, and two civil Secretaries.

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- b. Organization of the Admiralty. The organization of the Admiralty is quite complex, but in general each Sea Lord, the Civil Lord and the Parliamentary and Financial Secretary is responsible for the administration of certain departments and directorates, of which there are over 30. The Naval Staff is headed by the First Sea Lord who is the Chief of Naval Staff. It is divided into the Naval Intelligence, Plans, Operations, Training and Staff Duties, Tactical, and Air Divisions.
- c. <u>Fleet Organization and Distribution</u>. Ships of the Navy are divided into the Home and the Mediterranean Fleets, with relatively small forces in China, the East Indies, Africa, West Indies, and New Zealand.
- d. Naval Bases. One of the principal strengths of the British Navy is its world wide system of naval bases, fuel stations and protected anchorages. At home there are the large naval bases at Portsmouth and Devomport capable of building and repairing all classes of ships; the smaller naval bases of Chatham and Sheerness for building and repairing light craft; and a considerable number of fuel stations and protected anchorages. In addition there are numerous commercial dockyards capable of building and repairing naval vessels. Overseas there are the major bases of Gibraltar, Malta and Singapore capable of repairing vessels of all classes; and the minor bases of Trincomalee (Ceylon), Hongkong, Bermuda and Colombo (Ceylon), capable of repairing light craft. In addition there are minor bases in most of the Dominions and many fuel oil stations and protected anchorages. All naval bases and some of the fuel stations and anchorages are fortified. The 9.2-inch gun is the major caliber armament of the larger bases. The Singapore base has four 15-inch guns and there are unverified reports that guns of this caliber are being installed at Gibraltar.
- 16. Training, Efficiency and Morale. The training, efficiency and morale of the British Navy are very high.

V. GEOGRAPHIC.

17. Geographic Conditions Affecting Strategy. Three geographic conditions are dominant in affecting the strategy of the United Kingdom. The first is her location in dangerous proximity to the continent of Europe. This involves her in most major wars in that theater, in all of which she is threatened by invasion, aerial attack, and the destruction of her shipping. The second is the fact that she is very largely dependent upon seaborne commerce for food and raw materials and for carrying her exports. This makes it mandatory that she keep the sea lanes open. The third is that she has political and commercial ties in every part of the world that involve her to some degree in almost every international disagreement.

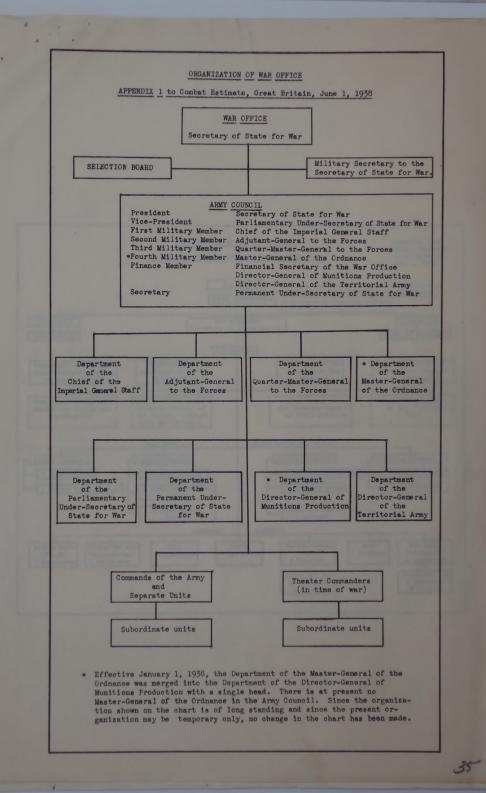
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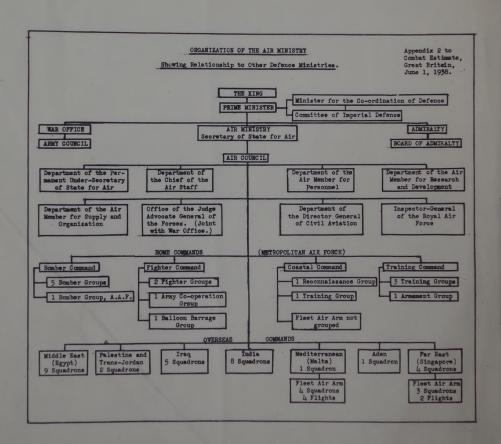
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VI. CONCLUSIONS.

18. Conclusions. The United Kingdom is the commercial and political center of the British Empire, with large banking, shipping, and communications interests. Politically her dominant policy is the protection of the British Isles and the preservation of the Empire by the maintenance of peace. As a corollary she must maintain Imperial communications and protect France and Belgium against umprovoked aggression. Partly to prevent war and partly to be able to wage war when it comes she has launched a large rearmament program that will probably cost \$10,000,000,000 in the five years ending in 1941. The British policy is to maintain a small Regular Army with reasonable forces in the Reserves and the Territorial Army. Over half of the Regular Army is overseas. From the remainder at home a small expeditionary force is available. Due to unsatisfactory organization and recruiting and to large deficiencies in modern materiel the Army could not initially be of great importance. In the air the policy is to maintain at home an Air Force equal to that of any single potential enemy within striking distance. the total number of combat planes this probably has been accomplished, but over half are obsolescent types. However, the potential production capacity is probably only about 60 per cent of that of Germany, the strongest potential enemy, and this will not be reached for another year. Both the Army and the Air Force rearmament programs are about one year behind schedule and generally unsatisfactory. The Navy rearmament program has progressed satisfactorily and Britain alone has a material naval superiority over her potential European enemies. Industrial mobilization is very unsatisfactory. Except for the Navy, the United Kingdom is not now well prepared for a general European war and will not reach even a reasonable preparedness for about two years.

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